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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,089	12/11/2003	Janice H. Nickel	5649-2236	9147
20792	7590	10/19/2007		
MYERS BIGEL SIBLEY & SAJOVEC			EXAMINER	
PO BOX 37428			DICKEY, THOMAS L	
RALEIGH, NC 27627				
			ART UNIT	PAPER NUMBER
			2826	
			MAIL DATE	DELIVERY MODE
			10/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/733,089

Applicant(s)

NICKEL ET AL.

Examiner

Thomas L. Dickey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 11, 12 and 14-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-10 and 13 is/are rejected.
- 7) ☐ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2003 and 05 May 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/09/2007 has been entered.

Claim Rejections - 35 USC § 102

2. Claims 1-6, 8-10 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by DAUGHTON ET AL. (2004/0125673).

Daughton et al. discloses a magnetic random access memory device with a plurality of magnetic memory elements 10 comprising a spin dependent tunnel junction (note figures 15A-B and paragraph 0101) or a giant magnetoresistive device (note figures 16A-B and paragraph 0107); at least one write conductor 22 and a free layer 15 or 16, wherein switching a magnetic orientation of at least one of the plurality of magnetic memory elements 10 comprises switching a magnetic orientation of the free layer 15 or 16; a sense line 20' comprising a semiconductor material comprising Si, coupled to the

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plurality of magnetic memory elements 10 in order to sense a magnetic orientation of at least one of the plurality of magnetic memory elements 10; the sense line 20' including first and second vias (no part #s, each of the vias, one via for each one of the plurality of magnetic memory elements 10; is described in paragraph 0082 as a "further conduction via into the substrate to the other side that transistor along the main current flow path therethrough from an adjacent interconnection 20 in contact with that cell." Note, paragraph 0079, that sense line interconnections 20 form strings so that each such string forms sense line 20'); and wherein the sense line 20' is utilized to thermally assist (note paragraph 0082) in switching a magnetic orientation of at least one of the plurality of magnetic memory elements 10; further comprising a current source (note paragraph 0095) coupled to the sense line 20' wherein utilizing the sense line 20' to thermally assist in switching a magnetic orientation of at least one of the plurality of magnetic memory elements 10 further comprises utilizing the current source to provide a current from the first to the second via wherein the current heats at least one of the plurality of magnetic memory elements 10; wherein the at least one write conductor 22 comprises only one write conductor 22, positioned orthogonal to the sense line 20' and utilized to switch (note paragraph 0095) the magnetic orientation at least one of the plurality of magnetic memory elements 10. Furthermore, with regard to claim 9 Daughton et al. further discloses two write conductors 22 (one associated with a first of the plurality of magnetic memory elements 10 and the second associated with a second of the plurality

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of magnetic memory elements 10) wherein the two write conductors 22 are utilized to switch the magnetic orientation of at least one (in fact, two) of the plurality of magnetic memory elements 10. Note figures 11A, 15A-B, 16A-B, 20, 21, 22, and paragraphs 0078-0084, 0087-0095, and 0101-0107 of Daughton et al.

The applicant's claims 1-6, 8-10 and 13 do not distinguish over the Daughton et al. reference regardless of the functions allegedly performed by the claimed device, because only the device per se is relevant, not the recited function of employing the claimed sense line for providing a current from the first via to the second via.

Note that functional language in a device claim is directed to the device per se, no matter which of the device's functions is referred to in the claim. *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) ("[A]pparatus claims cover what a device *is*, not what a device *does*" [emphasis in original]), makes it clear that it is the patentability of the device per se which must be determined in a "functional language" claim and not the patentability of the function, and that an old or obvious device alleged to perform a new function is not patentable as a device, whether claimed in "functional language" terms or not. Note that caselaw makes clear that in such cases applicant has the burden of showing that a prior art device that appears reasonably capable of performing the allegedly novel function is in fact incapable of doing so. See *In re King*, 231 USPQ 136 (Fed. Cir, 1986) ("It did not suffice merely to assert that [the cited prior art] does not inherently achieve [the claimed

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function], challenging the PTO to prove the contrary by experiment or otherwise. The PTO is not equipped to perform such tasks") and *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977) (claiming a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable). See MPEP § 2114.

In *Ex parte Smith*, 83 USPQ2d 1509 (Bd. Pat. App. & Int. 2007, PRECEDENTIAL), the Board found, "There is nothing in the Specification to indicate that the [property] necessary to render the [claimed structure] [capable of the claimed function] is anything more than the inherent result of constructing the [claimed structure] of standard materials in accordance with claim 35's other limitations, which are expressly disclosed in [the prior art]." The Board held, "We thus agree with the Examiner that a prima facie case of anticipation is established by [the prior art]. Because the Appellant presented no evidence to overcome the Examiner's finding of the inherent ability of [the prior art's] [structure] to [perform the claimed function], she failed to meet her burden to overcome that prima facie case. We therefore find that claim 35 is anticipated by [the prior art]." The Board cited *In re King* for the proposition that "[A] prima facie case of anticipation [may be] based on inherency," and *In re Best* for the proposition that "Where, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess

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the characteristics of his claimed product,” in support of its holding. See *Ex parte Smith*, 83 USPQ2d 1509,1514 (Bd. Pat. App. & Int. 2007). Applicant will please note that the fact one could reasonably expect the prior art to perform the recited function was enough to support a prima facie finding that the device claimed by virtue of the recital of said function was identical to (or obvious in view of, as the case may be) the prior art device.

In this case it is reasonable to assume that Daughton et al.'s device is capable of employing the disclosed sense line for providing a current from the first via to the second via, because a comparison of Applicant's specification to Daughton et al.'s disclosure reveals that Daughton et al. discloses a device that is apparently identical to the device Applicant describes as being capable of performing the function of employing a sense line for providing a current from the first via to the second via.

Because it is reasonable to assume that Daughton et al.'s device is capable of performing the claimed function, the burden shifts to Applicants to show that it are not. See MPEP § 2114.

Response to Arguments

3. Applicant's arguments filed 02/20/2007 have been fully considered but they are not persuasive.

It is argued, at page 7 of the remarks, that “According to the highlighted recitations of independent Claim 11 above, current flows between a first via and a second via to

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switch the magnetic orientation of one or more of the magnetic memory elements. This is described, for example, in the Specification at page 9, lines 4 - 10 where the text explains with reference to FIG. 6 that current flows between the first via 630 to the second via 640." However, as the Federal Circuit explained in *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), claims to an apparatus such as Applicants' magnetic random access memory device "cover what a device *is*, not what a device *does*."

It must further be noted that Applicants' figure 6 and the accompanying text describe a device which uses current source 660 (note that none of claims 1-6, 8-10, and 13 claim a "current source") to provide current to vias 630 and 640. Sense line 620 has a purely passive, resistive role in the embodiment of Applicants' invention shown in Applicants' figure 6. Daughton et al.'s sense line 20', being structurally identical to Applicants' sense line 620, must be presumed (a *prima facie* presumption Applicants may overcome with appropriate evidence) capable of performing the same resistive role.

It is argued, at page 8, that "[A]ccording to Daughton, when the cell switching transistor of a selected cell turns on, current flows from the sense line 20' to the word line 22 by way of a conduction via. Therefore, current does not flow through additional conduction vias for non-selected cells because cell switching transistors for the non-selected cells are turned off. Although a plurality of cells are selected, because the

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current flows from the sense line 20' to the word line 22 (or from the word line 22 to the sense line 20'), the current flows in the same direction within all conduction vias for the selected cells."

Applicant is describing how Daughton et al. choose (noting that one may choose, on a whim, to turn cell switching transistors on and off) to operate the claimed device. Should Daughton et al. disclose (as Applicants here assert) operating the claimed device in a manner that is different from Applicants' method of operation, Applicants have the option of claiming a novel and distinct method. Applicant's present claims are drawn to the device Daughton et al. discloses.

It is argued, at page 9 of the remarks, that "Applicant submits, however, that Daughton does not disclose or suggest a current source that provides current from a first via to a second via [i.e., a current source capable of accepting current from the first via and delivering it to the second] as recited in Claim 7, as amended." This argument is persuasive.

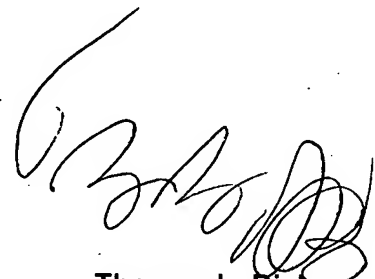
Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas L. Dickey whose telephone number is 571-272-1913. The examiner can normally be reached on Monday-Thursday 8-6.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Purvis can be reached on 571-272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thomas L. Dickey
Patent Examiner
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06/06